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SARCOPHAGIDÆ OF NEW ENGLAND: GENUS SARCOPHAGA.¹

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Sarcophaga pachyprocta, new species.

1881. *Sarcophaga pachyprocta* Hagen, Can. Ent., vol. 13, pp. 148-149.
Occurrence.

Type: Massachusetts Agricultural College, male and female.

Paratypes: United States National Museum, one male, one female (no. 19168); Boston Society of Natural History, one male, three females; Gypsy Moth Parasite Laboratory at Melrose Highlands, Mass., one male, one female; collection of C. W. Johnson, one male, two females; collection of author, two males, one female.

Male.—Breadth of front at its narrowest part from five-sevenths to five-sixths eye width; arista shortly plumose on basal half; vestiture of back of head black except for a narrow band of yellow hair just above foramen and similarly colored hairs on a small portion of the metacephalon just beneath; cheeks clothed with black bristles and bristle-like hairs; lateral verticals present; greater ocellars nearly as strong or sometimes stronger than uppermost pair of frontals; first and third veins prominently bristly; costal spine short but distinct; section III of costa practically equal to section V; vestiture of legs short except for scattered, long hairs on ventral surfaces of middle and hind femora; middle femur without posterior ventral row of bristles;

¹ Contribution from the Entomological Laboratory of the Massachusetts Agricultural College.

bristles of thorax stout and prominent, hinder two pairs of anterior dorsocentrals almost as strong as postsuturals; acrostichals present; three pairs posterior dorsocentrals of about equal size; scutellar apicals present; lower sternopleura with bristles only; abdomen short, stout, its outline more elliptical than oval; nota clothed dorsally and ventrally with short, reclinate bristles; vestiture of third plate erect; second segment usually with two stouter marginals at center; genital segments completely filling cavity of fourth notum (see figure); second segment discoidal, rounded, dull orange, first much larger and completely pollinose or its posterior part dull orange.

Female.—Vestiture of back of head black except for a narrow band of yellow hair just above foramen and similarly colored hairs on a small portion of the metacephalon just beneath; cheeks clothed with black bristles and bristle like hairs; greater ocellars nearly as strong or sometimes stronger than uppermost pair of frontals; hairs covering anterior spiracles mostly grayish; first and third veins prominently bristly; costal spine short but distinct; section III of costa practically equal to section V; bristles of thorax stout and prominent; hinder two pairs of anterior dorsocentrals almost as strong as postsuturals; acrostichals present; three pairs posterior dorsocentrals of about equal size; bristles of lower sternopleura in three distinct rows; distinctly larger and more erect bristles mixed with vestiture of lateral and ventral surfaces of fourth notum; second segment usually with two stouter marginals at center; genital segments dull orange, sixth notum not divided into lateral lips, seventh similar in shape and visible just beneath it, but much smaller (almost vestigial).

Length: 5 to 11 mm., average 8 to 10 mm.

Male, Head.—Viewed from side parafrontals and genæ with dark reflections. Breadth of front at its narrowest part varies from five-sevenths to five-sixths eye width; cheek height one third or slightly greater than one third that of eye. Front prominent, sides of frontal vitta parallel anteriorly but its margins effaced below ocellar triangle. Second antennal segment dark, sometimes brownish especially at tip; third about twice length of second; arista shortly plumose on basal half. Back of head somewhat convex, its vestiture black except for a narrow band of yellow hair just above foramen and similarly colored hairs on a small portion of the metacephalon just beneath. Cheeks clothed with black bristles and bristle-like hairs. Gena with a row of minutes hairs near lower eye orbit and a few others that are scattered. Palpi dark.

Chaetotaxy.—Lateral verticals present; vibrissæ inserted just above line of oral margin; greater ocellars nearly as strong, sometimes stronger than uppermost pair of frontals.

Thorax.—Metanotum clothed with short scattered reclinate bristles. Hairs covering anterior spiracle dark basally, lighter toward tips; those of anterior margin of posterior spiracle dark brown; those of spiracular cover only brownish basally, mostly yellowish. Epaulets dark.

Wings.—Bend of fourth vein varies from an acute to a right angle; anterior cross-vein slightly more basal than end of first longitudinal; first and

third veins prominently bristly; costal spine distinct; section III of costa practically equal to section V; alulæ fringed with hair; calypters whitish, their margins fringed with white hair.

Legs.—Dark; tarsi without ventral bands of reflecting hairs; vestiture short except for a few scattered, long hairs on ventral surfaces of middle and hind femora. Posterior trochanter without "brush"; femur spindle shaped; anterior face with three rows of bristles, those of intermediate row shortest and not developed distally, those of lower row well separated and present on distal two thirds or thereabout; posterior face with ventral row of long, slender hair like bristles; tibia straight or slightly curved; tarsus not shorter than tibia; fourth segment at least one half fifth. Middle coxa with a single row of bristles, but there may be a few others anterior to it dorsally; femur with a complete anterior ventral row of bristles, posterior ventral row lacking or represented by long, well separated hairs; submesotibial bristle very strong. Ventral face of anterior coxa with an irregular row of bristles at each side only.

Chaetotaxy.—Bristles stout and prominent. The hinder two pairs of anterior dorsocentrals almost as strong as postsuturals; two pairs of acrostichals, presutural pair absent; inner presuturals absent or very weak; three pairs posterior dorsocentrals of about equal size; pre-scutellar acrostichals present but weak as compared to other bristles; scutellar apicals absent; three sternopleurals; lower sternopleura with bristles only.

Abdomen.—Rather short; depth almost equal to width so that it appears somewhat cylindrical, outline more elliptical than oval; nota clothed dorsally and ventrally with short reclinate bristles. Ventral plates as a whole with their sides converging posteriorly, sides of second and third distinctly rounded; vestiture hairy, that of first and second long, that of third shorter but erect.

Chaetotaxy.—Second segment usually with a row of weak, slender, decumbent marginals, sometimes two at center may be stronger and more erect; third with a complete marginal row dorsally and laterally or dorsally with only two marginals at center; fourth with a complete row ending ventrally at third notum.

Genital Segments.—Prominent; large, abruptly terminating the abdomen and occupying to its fullest extent cavity of fourth notum (see figure). First (*g. s.*₁), pollinose to varying extent, sometimes entirely so with reflecting colors of abdomen but usually posterior portion dull orange, posteriorly its vestiture longer than that of second segment, viewed from behind it presents a very large, slightly convex surface abruptly rounded forward dorsally (the segments being in their normal position), marginal bristles absent. Second (*g. s.*₂) segment (examined in similar position) appears like a slightly raised dull orange disk, anal area small. Forceps short, base without upward flap-like extensions, its vestiture not longer than that of second segment; beyond base prongs become abruptly slender and very small, thence attenuated to tips, both together looking like the end of a large blunt needle, their outline in profile sinuate, the anterior edges hairy. The dull orange lamellæ of fourth ventral plate may show beyond edges of fourth notum.

Genitalia.—Penis and claspers peculiarly modified, head of penis prominently spiny anteriorly as seen in profile. Accessory plates short but as segments are pulled out they show from behind as two erect plates parallel to but much shorter than forceps.

Female.—They differ from the males in the following important characters.

Head.—Breadth of front at its narrowest part practically equal to eye width, inner eye orbits diverging downward. Vestiture of genæ may be longer and more scattered.

Thorax.—Hairs covering anterior spiracle more distinctly grayish, entirely so or dark only basally.

Legs.—Lower row of bristles on anterior face of third femur more nearly complete than in male; ventral row of posterior face consisting of long, well separated bristles (usually four or five) on proximal half or slightly more. Anterior and posterior rows of bristles of middle femur complete, very weak on distal half, "comb" absent.

Chaetotaxy.—Bristles of lower sternopleura arranged in three distinct rows.

Abdomen.—Depth much less than width, outline oval. Vestiture of short, reclinate bristles except that bristles become longer and more erect laterally on second and third nota and laterally and ventrally on fourth notum. Ventral plates concealed in part; first and second plates, sometimes also third and fourth, with one or more pairs of surface bristles besides those of posterior margin.

Genital Segments.—Dull orange, grayish or yellowish pollinose. Sixth notum not divided into lateral lips, narrow, visible only from behind, margin fringed with bristles; spiracles below center, often concealed by edge of fourth notum; seventh notum much smaller than sixth, but similar and visible just beneath it.

Described from seven male and nine female specimens; several others examined.

Range: New England—Mass., Provincetown, Truro, Horseneck Beach, Nantucket, Cambridge, Saxonville, Lunenburg.

United States: N. Y., N. J., Pa., O.

Foreign: Canada (Manitoba?), Cuba (?), Hayti (?).

This species is peculiarly distinct from all others described. The character of the genital segments is distinctive in both sexes. The parafrontals and genæ are silvery gray, and particularly striking in the male because of the unusually wide front for that sex. There has been considerable doubt in my mind into which niche in the family this species could be sidetracked. Both its genital and external characters differ decidedly from those found in the genus *Sarco-phaga*. Some time ago I submitted a specimen to Dr. Böttcher for

his opinion. He replied in part that it "represents a type which I do not know from Europe or palearctic countries, but it has much the same features characteristic for several South American species," and also states that he had thought of making a new subgenus on the characters involved. This seems inadvisable for me to attempt on the basis of the single species represented among my material, so, for the present, it seems best to accept the genus *Sarcophaga* as a useful dumping ground. The more important characters which harmonize least with *Sarcophaga* are the vestiture of the back of the head, the broad front in the male, the stout nature of the chætotaxy throughout, the shape and vestiture of the abdomen in the male, and the genital segments and genitalia. There are other characters which would assume importance if they were duplicated in related forms.

NEW WESTERN GALL MIDGES.

BY E. P. FELT,

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The following accounts of species are based largely on material collected and reared by Mr. P. H. Timberlake, of the U. S. Bureau of Entomology, while in Colorado and California, the observations on habits and life history notes being made by him. It will be noted that his work has disclosed the presence of a number of gall midges upon various composites, indicating the prevalence of somewhat the same conditions as are to be found upon related plants in the eastern states. The rearing of several species of *Diarthronomyia* is particularly interesting in connection with the recent discovery of the chrysanthemum midge, *D. hypogæa* H. Lw. in this country. There are included in this lot of descriptions two accounts of species of Lasioptera infesting the leaf sheaths or the lower portion of the stem of two grasses, new records due to the investigations of Mr. C. N. Ainslie, also of the U. S. Bureau of Entomology.

ONODIPLOSIS new genus

This form, on account of the greatly reduced palpi, the somewhat produced mesonotum and the modified ovipositor, is allied to the